

Amendments to the Claims:

1. (currently amended) A system for performing operations management in an environment of a plurality of resources comprising:  
a plurality of devices corresponding to the plurality of resources, each of said devices performing the steps of:  
characterizing said corresponding resource; and  
determining at least one relation between said corresponding resource and others of said plurality of resources, wherein said step of determining at least one relation comprises the step of searching for at least one of complementary ones and substitute ones of said resources.
2. (original) A system for performing operations management as in claim 1 wherein said each device performs the further steps of:  
selecting at least one of said resources having said at least one relation; and  
transforming said selected resources to form at least one new resource in the environment.
3. (original) A system for performing operations management as in claim 2 wherein said characterizing said corresponding resource step comprises the step of representing characteristics with a plurality of properties and/or processes.
4. (original) A system for performing operations management as in claim 3 wherein said selecting at least one of said resources step comprises the steps of:  
identifying matching ones of said properties and/or processes to form a plurality of matching groups;  
evaluating said matching groups by computing how well said attributes match; and  
selecting at least one of said matching groups that are optimal with respect to said evaluation.

5. (original) A system for performing operations management as in claim 3 wherein said properties are selected from the group consisting of isa, hasa, doesa, and needsa.

6. (original) A system for performing operations management as in claim 2 wherein said devices perform the further step of:  
determining a graph representation of said resources and said relations.

7. (cancelled)

8. (currently amended) A system for performing operations management as in claim [[7]] 1 wherein said determining at least one relation step comprises the step of:  
searching for resources having complementary ones of said properties and/or processes.

9. (cancelled)

10. (currently amended) A system for performing operations management as in claim [[9]] 1 wherein said determining at least one relation step comprises the step of:  
searching for resources having substitute ones of said properties and/or processes.

11. (original) A system for performing operations management as in claim 1 wherein each of said plurality of devices is physically attached to said corresponding resource.

12. (original) A system for performing operations management as in claim 1 wherein each of said devices comprise data to identify said corresponding resource.

13. (original) A system for performing operations management as in claim 12 wherein said data is a bar code.

14. (original) A system for performing operations management in an environment of a plurality of resources comprising:

a plurality of devices corresponding to the resources, each of said devices performing the step of:

characterizing said corresponding resources; and  
selectively transforming said corresponding resource.

15. (original) A system for performing operations management as in claim 14 wherein said selectively transforming said corresponding resource comprises the steps of:

determining a plurality of candidate transformations of said corresponding resource; and  
evaluating at least one expected consequence of performing said at least one candidate transformation on a subset, P, of the plurality of resources.

16. (original) A system for performing operations management as in claim 15 wherein said selectively transforming step further comprises the step of:  
performing said selected candidate transformation.

17. (original) A system for performing operations management as in claim 15 wherein said subset, P, of the plurality of resources is a proper subset.

18. (original) A system for performing operations management as in claim 14 wherein said selectively transforming step is performed by only a portion, tau, of said devices.

19. (original) A system for performing operations management as in claim 14 wherein said selectively transforming said corresponding resource step comprises the step of:  
determining a plurality of candidate transformations of said corresponding resource;  
assigning said corresponding resource to at least one patch of said resources;

evaluating a utility of said patch of resources of performing said candidate transformations; and

selecting at least one of said candidate transformations that is optimal with respect to said utility.

20. (original) A system for performing operations management as in claim 19 wherein said patch is a proper subset of the plurality of resources.

21. (original) A system for performing operations management as in claim 19 wherein said at least one patch is at least one disjoint subset of the plurality of resources.

22. (currently amended) A system for performing operations management in an environment of entities and resources comprising:

a plurality of devices corresponding to the plurality of resources, each of said devices performing the steps of:

representing said corresponding resource with data; and

transmitting said ~~characterizing~~ data of said corresponding resource to others of said plurality of devices; and

at least one computer, said computer performing the steps of:

receiving said data representing said corresponding resource for said at least one of said devices; and

determining at least one relation among the resources for said data representing said corresponding resource.

23. (original) A system for performing operations management as in claim 22 further comprising a communication network communicating said data among said at least one computer and said at least one integrated circuit.

24. (original) A method for performing operations management in an environment of a plurality of resources comprising the steps of:

defining at least one algorithm having one or more parameters for performing operations management;

defining at least one global performance measure of said at least one algorithm;

executing said algorithm for a plurality of different values of said one or more parameters to generate a corresponding plurality of values for said global performance measure;

constructing a fitness landscape from said values of said parameters and said corresponding values of said global performance measure; and

optimizing over said fitness landscape to generate optimal values for said at least one parameter.

25. (original) A method for performing operations management as in claim 24 wherein said defining an algorithm step comprises the steps of:

representing the plurality of resources with a corresponding plurality of devices wherein each of said devices performs the steps of:

characterizing said corresponding resource; and

selectively transforming said corresponding resource.

26. (original) A method for performing operations management as in claim 25 wherein said at least one parameter comprises a proportion,  $p$  of the plurality of resources.

27. (original) A method for performing operations management as in claim 26 wherein said selectively transforming said corresponding resource step comprises the steps of:

determining a plurality of candidate transformation of said corresponding resource; and

evaluating at least one expected consequence of performing said at least one candidate transformation on said proportion,  $p$  of the plurality of resources.

28. (original) A method for performing operations management as in claim 27 wherein said selectively transforming step further comprises the step of:  
performing said selected candidate transformation.

29. (original) A method for performing operations management as in claim 25 wherein said at least one parameter comprises a fraction,  $\tau$ , of said plurality of devices.

30. (original) A method for performing operations management as in claim 29 wherein said selectively transforming step is performed on only said fraction,  $\tau$ , of said plurality of devices.

31. (original) A method for performing operations management as in claim 25 wherein said at least one parameter comprises a size of one or more patches of said plurality of devices and a location of said patches.

32. (original) A method for performing operations management as in claim 31 wherein said selectively transforming said corresponding resource step comprises the step of:  
determining a plurality of candidate transformations of said corresponding resource;  
assigning said corresponding resource to at least one of said patches of said resources;  
evaluating a utility of said patch of resources of performing said candidate transformations; and  
selecting at least one of said candidate transformations that is optimal with respect to said utility.

33. (currently amended) A device for performing operations management in an environment of a plurality of resources, said device representing one of the resources and comprising at least one memory storing computer executable program codes, wherein the program code comprises:

code to characterize said corresponding resource; and

code to determine at least one relation between said corresponding resource and others of said plurality of resources, wherein said code to determine at least one relation comprises code to search for at least one of complementary ones and substitute ones of said resources.

34. (new) The device of claim 33, wherein the program code further comprises:  
code to select at least one of said resources having said at least one relation; and  
code to transform said selected resources to form at least one new resource in the  
environment.

35. (new) A system for performing operations management in an environment of a  
plurality of resources comprising:

a plurality of devices corresponding to the plurality of resources, each of said devices  
performing the steps of:

characterizing said corresponding resource; and

determining at least one relation between said corresponding resource and others  
of said plurality of resources, wherein each of said plurality of devices is physically attached to  
said corresponding resource.

36. (new) A system for performing operations management in an environment of a  
plurality of resources comprising:

a plurality of devices corresponding to the resources, each of said devices performing the  
step of:

characterizing said corresponding resources; and

selectively transforming said corresponding resource, wherein said step of  
selectively transforming is performed by only a portion, *tau*, of said devices.